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C.L. (M.) 7271.

British Standards Institution
Report C.L. (M.) 7271

British Engineering Standards Association.

(*Incorporated 1918.*)

FORMED IN 1901 AS THE ENGINEERING STANDARDS COMMITTEE

BY

THE INSTITUTION OF CIVIL ENGINEERS.
THE INSTITUTION OF MECHANICAL ENGINEERS.
THE INSTITUTION OF NAVAL ARCHITECTS.
THE IRON AND STEEL INSTITUTE.
THE INSTITUTION OF ELECTRICAL ENGINEERS.

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INTERIM REPORT

ON

BRITISH ASSOCIATION (B.A.)

SCREW THREADS

WITH TOLERANCES FOR NOS. 0 TO 15 B.A.

(SUPERSEDING REPORT No. 20.)

LONDON:
PUBLISHED FOR THE ASSOCIATION BY CROSBY LOCKWOOD & SON,
7, STATIONERS' HALL COURT, LUDGATE HILL, E.C.4; AND 5, BROADWAY, LONDON, S.W.1;
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June, 1919.

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CONTENTS.

PAGE

Foreword 3

NOMENCLATURE AND DEFINITIONS.

Tolerance 5
Allowance 5
Clearance 5
Standard Gauges 5
Reference Gauges 5
Inspection Gauges 5
Shop Gauges 5
Check Gauges 6
Master Gauges 6
Effective Diameter of a Screw... 6
Core Diameter 7
Full Diameter 7
Crest 7
Root 7
Flank of Thread 7
Angle of Thread 7
Pitch 7

RECOMMENDATIONS.

1. Form of Thread 7
2. Definition of British Association Form of Thread ... 7
3. Pitches 8
4. Basis of B.A. Sizes 8
5. Standard B.A. Screw Threads 8
6 Dimensions and Tolerances 8
7. Tolerances on Pitch and Angle 8
8. Limiting Dimensions for B.A. Threads... 9
9. Grade and Play 10
10. Tolerances on Form of Thread... 10
11. Basis of Calculation of Tolerances 10

TABLES.

British Association Screw Threads.

Table I. Theoretical Dimensions of British Association Screw Threads 12, 13
Table II. Standard Sizes and Tolerances for Bolts ... 14
Table III. Standard Sizes and Tolerances for Nuts ... 15

FOREWORD.

The Standard sizes and dimensions of British Association Screws adopted by the British Association Small Screw Gauge Committee were recommended by the British Engineering Standards Association and published in Report No. 20. No tolerances were, however, specified. The National Physical Laboratory in 1915, therefore, drew up a provisional list of limiting dimensions for the guidance of manufacturers until definite decisions could be issued by the Association.

The present Report gives tolerances for the larger sizes only, viz., from No. 0 B.A. to No. 15 B.A. It is recognised, however, that standardisation in connection with the smaller sizes used by the clock and watchmaking trade is required, and that the smaller sizes in this Report may need revision in consequence. It is, therefore, intended to undertake a thorough review of the whole question and to solicit the co-operation of the trade. Pending such investigation, this Report has been issued provisionally to meet the present requirements for limits for the larger sizes.

The Association recommends that either the British Standard Whitworth or the British Standard Fine Threads be used on all screws of $\frac{1}{4}$ inch diameter and above, and the British Association for all screws below $\frac{1}{4}$ inch diameter with the following exception :—

Owing to the inclusion of a $\frac{7}{32}$ inch diameter screw in the British Standard Fine series, which screw is slightly smaller in diameter than the No. 0 B.A., it is recommended that it be used as a continuation of the British Standard Fine series in preference to the No. 0 B.A.

REPORT

ON

BRITISH ASSOCIATION (B.A.)

SCREW THREADS

WITH TOLERANCES FOR NOS. 0 TO 16 B.A.

(SUPERSEDING REPORT No. 20.)

The following Nomenclature and Definitions, referring to Screw Threads and Plain Cylindrical Work, will be employed in Reports on these subjects issued by the Association.

NOMENCLATURE AND DEFINITIONS.

Tolerance.—A difference in dimensions prescribed in order to tolerate unavoidable imperfections of workmanship.

Allowance.—A difference in dimensions, prescribed in order to allow of various qualities of fit.

Clearance.—A difference in dimensions, or in the shape of the surface, prescribed in order that two surfaces, or parts of surfaces, may be clear of one another.

Standard Gauges.—A standard gauge is a gauge made as accurately as possible to its nominal dimensions and suitable for depositing with some recognised authority such as the Board of Trade or the National Physical Laboratory for purposes of ultimate reference.

Reference Gauges.—A reference gauge is similar to a standard gauge, but is intended for use by manufacturers or others. Reference gauges shall be verified, and their accuracy certified, by the National Physical Laboratory.

Inspection Gauges.—Gauges used by inspectors to check the accuracy of the work and determine if it is within the limits laid down. The Association recommend that they shall be verified and their accuracy certified by the National Physical Laboratory.

Shop Gauges.—Gauges used in the workshop to control manufacture and verified from time to time either by comparison with reference gauges, or by the use of suitable check gauges. Alternatively,

they may, if desired, be sent to the National Physical Laboratory for verification.

NOTE.—The work is usually specified as lying between certain definite limits of size, and the various types of gauges destined to ensure this (Standard, Reference, Inspection or Shop Gauges) usually take the form of "Limit" Gauges. The "Go" limit gauge should control all elements of the work simultaneously. The "Not go" limit gauges should be confined in their application to one element at a time.

The tolerances allowed on inspection gauges should be such that all work between the limits of size specified will be accepted. This is ensured by giving a *plus* tolerance to the "high" inspection gauge and a *minus* tolerance to the "low."

The tolerances on shop gauges should be such that all work passed by them is necessarily between the specified limits of size. To secure this the tolerance on the "high" shop gauges must be *minus* and that on the "low" shop gauge must be *plus*.

The tolerances on standard and reference gauges are of the same sign as those on inspection gauges, but are kept as small as possible in magnitude.

Check Gauges.—Gauges used for verifying the accuracy of other gauges. Generally speaking they are of opposite form to the gauges they are intended to verify, *e.g.*, the check for a ring gauge is a plug, and *vice-versa*. Check gauges may be further sub-divided into standard check gauges and shop check gauges, following the definitions given above.

Master Gauges.—Gauges used only in the manufacture of, or for the purpose of verifying, check gauges. They are again of opposite kind to the check gauges, and in some cases standard or reference gauges will serve as master gauges. More frequently, however, master gauges, when required, have to be specially designed.

Fig. 1.

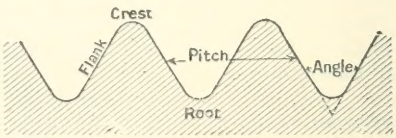

Fig. 2.

Effective Diameter of a Screw.—The Effective Diameter of a perfect screw having a single thread is the length of a line drawn through the axis and at right angles to it, measured between the points where the line cuts the flanks of the thread. (Fig. 1.)

Core Diameter.—The Core Diameter is twice the minimum radius of a screw, measured at right angles to the axis. (Fig. 1.)*

Full Diameter.—The Full Diameter is twice the maximum radius of a screw, measured at right angles to the axis. (Fig. 1.)

Crest.—The Crest is the prominent part of the thread, whether of the male screw or of the female screw. (Fig. 2.)

Root.—The Root is the bottom of the groove of the thread, whether of the male screw or of the female screw. (Fig. 2.)

Flank of Thread.—The Flank of the Thread is the straight part of the thread which connects the crests and roots. (Fig. 2.)

Angle of Thread.—The Angle of the Thread is the angle between the flanks, measured in the axial plane. (Fig. 2.)

Pitch.—The Pitch is the distance measured along a line parallel to the axis of the screw between the point where it cuts any thread of the screw and the point at which it next meets the corresponding part of the same thread (Fig. 2.) *The reciprocal of the pitch* measures the number of turns per unit of length.

RECOMMENDATIONS.

Form of Thread.

1. The Association recommends that the form of thread adopted by the British Association Small Screw Gauge Committee, as defined in Clause 2, be used on all Screws below $\frac{1}{4}$ inch diameter.†

Definition of British Association Form of Thread.

2. The following defines the British Association Thread :—

The *British Association Form of Thread* is one in which the angle between the Flanks, measured in the axial plane, is 47·5°; the threads are rounded equally at crests and roots to a radius of nearly two-elevenths of the Pitch, leaving the depths of thread given in Table I.

---

* From Fig. 1 it will be seen that the "*core diameter*" of the male thread is measured between the roots of the thread; it should be borne in mind, however, that the "*core diameter*" of the female thread, being approximately the same dimension, is measured between the crests of the thread.

† An exception to this occurs in the case of the 7/32 in. B.S.F. Screw, which is slightly smaller in diameter than the No. 0 B.A. and should be used as a continuation of the B.S.F. series in preference to the No. 0 B.A.

Pitches.

3. In the accompanying Tables will be found the pitches for the British Association Screw Threads for screws ranging in size from No. 0 B.A. to No. 25 B.A.

Basis of B.A. Sizes.

4. The Nominal sizes of the B.A. threads are based upon the following definitions:—

(1) Metric sizes are standard, the standard sizes in millimetres being rounded off in each case to the second significant figure after calculation from the formulæ given below.

(2) The pitches, in millimetres, are given by the formula

$$p = (0{\cdot}9)^n,$$

where "n" is the number designating the screw.

(3) The diameters are obtained from the formula

$$D = 6p^{6/5}.$$

(4) The angle of thread is $47\frac{1}{2}°$.

(5) The roots and crests of the threads are rounded with equal radii such that the double depth of thread equals $6/5p$.

As a result of this last provision the effective diameters and depths of threads, in certain cases round off to odd multiples of 0·005 mm.; but all other standard dimensions are in multiples of 0·01 mm. The tolerances given in Tables II. and III. are rounded up to the nearest 0·005 mm. calculated from the formulæ by which they are defined, so that finally all the limiting sizes are in multiples of 0·005 mm. or 0·01 mm.

Standard B.A. Screw Threads.

5. The Association recommends that all Screw Threads made in accordance with the sizes given in Tables II. and III. be known as *British Association (B.A.) Screw Threads.*

Dimensions and Tolerances.

6. In Tables II. and III. are given the leading dimensions of the B.A. Threads and the tolerances on these. The dimensions—in millimetres—are specified to the nearest five in the third place of decimals.

Tolerances on Pitch and Angle.

7. When considering the interchangeability of a thread (apart from its crests and roots), its effective diameter, its pitch, and its angle must be dealt with.

Errors in pitch and angle can be met by a suitable alteration of effective diameter, and if the screw will accept a complete form "go" gauge of suitable length, it is evident that the errors in pitch and angle do not prevent interchangeability, while provided that the screw rejects a "not go" effective diameter gauge made to the prescribed limit of tolerance, it is clear that the screw does not differ so seriously from standard form as to be a loose fit.

Thus it is strictly only necessary to tabulate tolerances on the full, core and effective diameters. At the same time it is convenient to know what errors in pitch and in angle can be met by the effective diameter tolerance. These are shown in columns (4) and (5) of Tables II. and III. These columns have been calculated on the assumption that errors of pitch and angle contribute equally to the diametral error. If no pitch error existed, the angle error could be double as large as is given, and conversely, but this is not contemplated as being desirable.* If pitch and angle error both exist to the amount tabulated, the effective diameter of the bolt must be reduced by the full amount of the tolerance or it will not enter the standard nut. The pitch error tabulated is the total error in the length of engagement. The maximum angle error tabulated has been limited to $\pm 8^{\circ}$.

The tolerances on effective diameter required to compensate for errors in angle y and pitch z are respectively given by the following formulæ:—

p being the pitch of the thread, and
$2a$ the pitch error.

$$y = 0{\cdot}009 \times p \times \left(\left(\alpha - 23\tfrac{3}{4}^{\circ}\right) \div \left(\beta - 23\tfrac{3}{4}^{\circ}\right)\right)$$
$$z = 2a \times 2{\cdot}273.$$

An explanation of the method of obtaining the diametral corrections required to compensate for errors in pitch and angle respectively is given in the Appendices to Report No. 84—1918, Report on British Standard Fine (B.S.F.) Screw Threads and their Tolerances.

Limiting Dimensions for B.A. Threads.

8. Tables II and III. then specify the dimensions of the B.A. Threads.

The tolerances on the full, effective, and core diameters are given in columns 7, 10 and 13, and a British Association Screw Thread is one in which the full, effective, and core diameters are between the limiting dimensions given in the Tables, and which would pass a complete form gauge of appropriate length, accurate in pitch and angle, made to the dimensions in Columns 6, 9 and 12.†

* It should be noted that if the flanks are straight, an error in angle corresponding to half the permitted tolerance on effective diameter at the half depth of thread (which is the angle error given in the tables) involves either the top or the bottom of the flank being on the limit of tolerance allowed.

† See page 10, line 16 onwards.

Grade and Play.

9. The term "grade" has been introduced to express the sum of the errors on effective diameter and on pitch and angle measured as diametral errors, while the term "play" is used for the difference between the effective diameter error and the sum of the other two. These terms are more fully explained in Appendix I. of Report No. 84—1918, previously referred to, and have been found useful in connection with the inspection of small screws for aircraft work by a projection method. The values of the grade and play for B.A. threads are given in columns 15 and 16 of Tables II. and III.

In some cases—*e.g.*, where the projection method of inspection is employed—it is found more convenient to specify a thread by the tolerances on the full and core diameters, the grade and the play, rather than by the tolerances on the full, core and effective diameters.

Alternatively then, a thread so specified, and for which the errors on full and core diameters are within the tolerances and for which the grade and play are within the limits given in the Tables is to be accepted as a B.A. thread.

Tolerances on Form of Thread.

10. The Tables do not specify tolerance on the form of the thread at the crest and root. Fit at the crest and root is not ordinarily required in nuts and bolts, and so long as the diameters are within the tolerances shewn the exact form of the curve connecting the crest or the root with the flank is immaterial, provided it is not such as to fall outside the boundaries of perfect thread forms defined by the limits of diameter given in the tables of tolerance. In the case of gauges the theoretical form must be followed and attention given to the curvatures.

Basis of Calculation of Tolerances.

11. It remains now to explain how the tolerances for the different elements have been fixed.

Finding that the formulæ used in connection with the B.S.F. and B.S.W. Screw Threads were not applicable to the B.A. series, the resulting tolerances being too great in the case of the smaller sizes, it was decided to take for the tolerances on the full diameter such figures as would give a loss of engagement of not more than one-quarter of the depth of the thread.

The following formula was found to fulfil this requirement :—

Tolerance on Full Diameter $= 0{\cdot}15\sqrt{p}$.

where p is the pitch of the screw in millimetres.

For the tolerances on the Effective Diameter, 0·10 mm. was agreed upon for the No. 0 B.A. and 0·04 approximately for the No. 12 B.A. as being limits which could be worked to in practice, and the tolerances for the intermediate sizes were made proportional.

The following formula was thus obtained :—

$$\text{Tolerance on Effective Diameter} = 0{\cdot}08p + 0{\cdot}02.$$

The tolerances for the remainder of the series were obtained from the same expression.

The tolerances on the Core Diameter are twice those on the Effective Diameter.

It is realised that in the case of the smallest sizes, the tolerances on root and flank diameters are relatively somewhat large though actually very small, but as No. 15 B.A. is thought to be the smallest size in general use, it is considered that this need not affect the utility of the tables. The tables of tolerances have been set out only for sizes down to No. 15 B.A.

The following is a schedule of the tolerances which have been adopted :—

BRITISH ASSOCIATION THREADS (TABLES II. AND III.).

Tolerances.

	Full Diameter.	Effective Diameter.	Core Diameter.
Bolt ...	$0{\cdot}15p$	$0{\cdot}08p + 0{\cdot}02$	$2(0{\cdot}08p + 0{\cdot}02)$
Nut ...	$2(0{\cdot}08p + 0{\cdot}02)$	$0{\cdot}08p + 0{\cdot}02$	$0{\cdot}15p$

The corresponding limits for Grade and Play are :—

$$\text{Grade} = 2(0{\cdot}08p + 0{\cdot}02)$$
$$\text{Play} = 0{\cdot}08p + 0{\cdot}02.$$

Table I. THEORETICAL DIMENSIONS OF BRITISH ASSOCIATION SCREW THREADS.

1	2	3	4	5	6	7	8	9
Designating Number.	Pitch.	Approximate Pitch in inches.	Depth of Thread.	Full Diameter. Bolt and Nut.		Effective Diameter. Bolt and Nut.	Core Diameter. Bolt and Nut.	Approximate Cross-Sectional Area at Bottom of Thread.
	mm.		mm.	mm.	Inches. Approx.	mm.	mm.	sq. mm.
0	1·00	·0394	·60	6·0	·236	5·40	4·80	18·10
1	·90	·0354	·54	5·3	·209	4·76	4·22	13·99
2	·81	·0319	·485	4·7	·185	4·215	3·73	10·93
3	·73	·0287	·44	4·1	·161	3·66	3·22	8·14
4	·66	·0260	·395	3·6	·142	3·205	2·81	6·20
5	·59	·0232	·355	3·2	·126	2·845	2·49	4·87
6	·53	·0209	·32	2·8	·110	2·48	2·16	3·66
7	·48	·0189	·29	2·5	·098	2·21	1·92	2·89
8	·43	·0169	·26	2·2	·087	1·94	1·68	2·22
9	·39	·0154	·235	1·9	·075	1·665	1·43	1·61
10	·35	·0138	·21	1·7	·067	1·49	1·28	1·29
11	·31	·0122	·185	1·5	·059	1·315	1·13	1·00
12	·28	·0110	·17	1·3	·051	1·13	·96	·72

BRITISH ENGINEERING STANDARDS ASSOCIATION.

TABLE I. (*continued*). **THEORETICAL DIMENSIONS OF BRITISH ASSOCIATION SCREW THREADS.**

1	2	3	4	5	6	7	8	9
Designating Number.	Pitch.	Approximate Pitch in inches.	Depth of Thread.	Full Diameter. Bolt and Nut.		Effective Diameter. Bolt and Nut.	Core Diameter. Bolt and Nut.	Approximate Cross Sectional Area at Bottom of Thread.
	mm.		mm.	mm.	Inches. Approx.	mm.	mm.	sq. mm.
13	·25	·0098	·15	1·2	·047	1·05	·90	·64
14	·23	·0091	·14	1·0	·039	·86	·72	·41
15	·21	·0083	·125	·90	·035	·775	·65	·33
16	·19	·0075	·115	·79	·031	·675	·56	·25
17	·17	·0067	·10	·70	·028	·60	·50	·20
18	·15	·0059	·09	·62	·024	·53	·41	·15
19	·14	·0055	·085	·54	·021	·455	·37	·11
20	·12	·0047	·07	·48	·019	·41	·34	·091
21	·11	·0043	·065	·42	·017	·355	·29	·066
22	·10	·0039	·06	·37	·015	·31	·25	·049
23	·09	·0035	·055	·33	·013	·275	·22	·038
24	·08	·0031	·05	·29	·011	·24	·19	·028
25	·07	·0028	·04	·25	·010	·21	·17	·023

C.L. M. 7271

BRITISH ENGINEERING STANDARDS ASSOCIATION.

TABLE II.—BRITISH ASSOCIATION SCREW THREADS.

Standard Sizes and Tolerances.

BOLTS.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Designating Number.	Pitch.	Approx. No. of Threads per inch.	Tolerances. See Note A.		Full Diameter.			Effective Diameter.			Core Diameter.			Grade.	Maximum Play permissible.	Designating Number.
			Pitch.	Angle.	Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.	Min.	Hundredths of a mm.	Hundredths of a mm.	
	mm.		mm.	deg.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.			
0	1·00	*25·4*	·020	5·5	6·000	·150	5·850	5·400	·100	5·300	4·800	·200	4·600	20·0	10·0	0
1	·90	*28·2*	·020	5·6	5·300	·135	5·165	4·760	·090	4·670	4·220	·185	4·035	18·5	9·0	1
2	·81	*31·3*	·020	5·8	4·700	·120	4·580	4·215	·085	4·130	3·730	·170	3·560	17·0	8·5	2
3	·73	*34·8*	·015	5·9	4·100	·110	3·990	3·660	·080	3·580	3·220	·155	3·065	15·5	8·0	3
4	·66	*38·5*	·015	6·1	3·600	·100	3·500	3·205	·075	3·130	2·810	·145	2·665	14·5	7·5	4
5	·59	*43·1*	·015	6·3	3·200	·090	3·110	2·845	·070	2·775	2·490	·135	2·355	13·5	7·0	5
6	·53	*47·9*	·015	6·4	2·800	·080	2·720	2·480	·060	2·420	2·160	·125	2·035	12·5	6·0	6
7	·48	*52·9*	·015	6·7	2·500	·070	2·430	2·210	·060	2·150	1·920	·115	1·805	11·5	6·0	7
8	·43	*59·1*	·010	6·9	2·200	·065	2·135	1·940	·055	1·885	1·680	·110	1·570	11·0	5·5	8
9	·39	*65·1*	·010	7·2	1·900	·060	1·840	1·665	·050	1·615	1·430	·100	1·330	10·0	5·0	9
10	·35	*72·6*	·010	7·5	1·700	·055	1·645	1·490	·050	1·440	1·280	·095	1·185	9·5	5·0	10
11	·31	*81·9*	·010	8·0	1·500	·045	1·455	1·315	·045	1·270	1·130	·090	1·040	9·0	4·5	11
12	·28	*90·7*	·010	8·0	1·300	·040	1·260	1·130	·040	1·090	·960	·085	·875	8·5	4·0	12
13	·25	*102·0*	·010	8·0	1·200	·040	1·160	1·050	·040	1·010	·900	·080	·820	8·0	4·0	13
14	·23	*110·0*	·010	8·0	1·000	·035	·965	·860	·040	·820	·720	·075	·645	7·5	4·0	14
15	·21	*121·0*	·010	8·0	·900	·030	·870	·775	·035	·740	·650	·075	·575	7·5	3·5	15

NOTE A.—Columns 4 and 5 give, for information, the errors in pitch per length of thread engaged and angle respectively, which can each be compensated by half the tolerance on effective diameter given in column 10, *vide* Recommendation 7, page 8. The errors in pitch and angle shown in the Table may exist together, provided the effective diameter is reduced by the full tolerance shown in column 10. The permissible error in pitch may be increased up to double the value shown, provided the error in angle is correspondingly reduced and *vice versa*.

BRITISH ENGINEERING STANDARDS ASSOCIATION.

TABLE III.—BRITISH ASSOCIATION SCREW THREADS.

Standard Sizes and Tolerances.

NUTS.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Designating Number.	Pitch.	Approx. No. of Threads per inch.	Tolerance. See Note A.		Full Diameter.			Effective Diameter.			Core Diameter.			Grade.	Maximum Play permissible.	Designating Number.
			Pitch.	Angle.	Min.	Tol.	Max.	Min.	Tol.	Max.	Min.	Tol.	Max.	Hundredths of a mm.	Hundredths of a mm.	
	mm.		mm.	deg.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.			
0	1·00	25·4	·020	5·5	6·000	·200	6·200	5·400	·100	5·500	4·800	·150	4·950	20·0	10·0	0
1	·90	28·2	·020	5·6	5·300	·185	5·485	4·760	·090	4·850	4·220	·135	4·355	18·5	9·0	1
2	·81	31·3	·020	5·8	4·700	·170	4·870	4·215	·085	4·300	3·730	·120	3·850	17·0	8·5	2
3	·73	34·8	·015	5·9	4·100	·155	4·255	3·660	·080	3·740	3·220	·110	3·330	15·5	8·0	3
4	·66	38·5	·015	6·1	3·600	·145	3·745	3·205	·075	3·280	2·810	·100	2·910	14·5	7·5	4
5	·59	43·1	·015	6·3	3·200	·135	3·335	2·845	·070	2·915	2·490	·090	2·580	13·5	7·0	5
6	·53	47·9	·015	6·4	2·800	·125	2·925	2·480	·060	2·540	2·160	·080	2·240	12·5	6·0	6
7	·48	52·9	·015	6·7	2·500	·115	2·615	2·210	·060	2·270	1·920	·070	1·990	11·5	6·0	7
8	·43	59·1	·010	6·9	2·200	·110	2·310	1·940	·055	1·995	1·680	·065	1·745	11·0	5·5	8
9	·39	65·1	·010	7·2	1·900	·100	2·000	1·665	·050	1·715	1·430	·060	1·490	10·0	5·0	9
10	·35	72·6	·010	7·5	1·700	·095	1·795	1·490	·050	1·540	1·280	·055	1·335	9·5	5·0	10
11	·31	81·9	·010	8·0	1·500	·090	1·590	1·315	·045	1·360	1·130	·045	1·175	9·0	4·5	11
12	·28	90·7	·010	8·0	1·300	·085	1·385	1·130	·040	1·170	·960	·040	1·000	8·5	4·0	12
13	·25	101·6	·010	8·0	1·200	·080	1·280	1·050	·040	1·090	·900	·040	·940	8·0	4·0	13
14	·23	110·0	·010	8·0	1·000	·075	1·075	·860	·040	·900	·720	·035	·755	7·5	4·0	14
15	·21	121·0	·010	8·0	·900	·075	·975	·775	·035	·810	·650	·030	·680	7·5	3·5	15

NOTE A.—Columns 4 and 5 give, for information, the errors in pitch per length of thread engaged and angle respectively, which can each be compensated by half the tolerance on effective diameter given in column 10, *viz.* Recommendation 7, page 8. The errors in pitch and angle shown in the Table may exist together, provided the effective diameter is increased by the full tolerance shown in column 10. The permissible error in pitch may be increased up to double the value shown, provided the error in angle is correspondingly reduced and *vice versa*.

C.L. (M.) 7271.

British Engineering Standards Association.

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OF

BRITISH STANDARD SPECIFICATIONS AND REPORTS.

JUNE, 1919.

(This List cancels all previous Lists.)

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